

RUSS COLSON PUBLICATIONS:

Books (nonfiction):

- Colson R. O. and Colson M C. (2016) Learning to Read the Earth and Sky, Explorations Supporting the NGSS, Grades 6-12, NSTA Press, 426p.
- Russ Colson (2017) A Little Book of Gardening in Northwest Minnesota, Russell Colson, 110p.
- Liag Nosloc (2020) Using Up the Cream (Russ Colson, editor), Russell Colson, 163p.
- Russ Colson 2024) Rules for Living Well (or How to Lead a Boring Life), Russ Colson, 66p.

Books (fiction):

- Russ Colson (2018) The Arasmith Certainty Principle, Double Dragon Publishing, 432p.
Chanticleer International Book Award 1st Place Category Winner

Peer-reviewed and technical papers:

- Colson, R.O., McKay, G.A., and Taylor, L.A. (1988) Temperature and Composition dependencies of trace element partitioning: Olivine/melt and Low-Ca pyroxene/melt, *Geochim. Cosmochim. Acta* 52, 539-553.
- Colson, R.O. and Gust, D. (1989) Effects of pressure on partitioning of trace elements between low-Ca pyroxene and melt, *Am. Miner.* 74, 31-36.
- Colson, R.O., McKay, G.A., and Taylor, L.A. (1989) Charge-balancing of trivalent trace elements in olivine and low-Ca pyroxene: A test using experimental partitioning data, *Geochim. Cosmochim. Acta* 53, 643-648.
- Colson, R.O., McKay, G.A., and Taylor, L.A. (1989) Partitioning data pertaining to Fe-Mg ordering around trace cations in olivine and low-Ca pyroxene, *Contr. Mineral. Petrol.* 102, 242-246.
- Colson R. O. and Haskin, L. A. (1990) Lunar oxygen and metal for use in near-earth space: Magma electrolysis, In *Engineering, Construction, and Operations in Space II: Volume 1* (Ed. S. W. Johnson and J. P. Wetzel), ASCE New York, 187-196.
- Haskin, L. A. and Colson R. O. (1990) Lunar resources: toward living off the lunar land, In *Space Mining and Manufacturing* (Ed. T. Triffet), Univ. of Arizona, Tucson, 111-119.
- Colson, R. O., Haskin, L. A., and Crane, D (1990) Electrochemistry of cations in diopsidic melt: Determining diffusion rates and redox potentials from voltammetric curves, *Geochim. Cosmochim. Acta* 54, 3353-3367.
- Taylor, L. A., Cooper, B., McKay, D. S., and Colson, R. O. (1991) Oxygen production on the moon: Processes for different feedstocks, in *Metallurgy processing fundamentals: Lunar mining and processing*, Soc. of Mining, Metallurgy, and Exploration (SME) of the American Institute of Mining, Metallurgical, and Petroleum Engineers Inc. preprint 91-83.
- Colson, R. O., Haskin, L. A., and Keedy, C. R. (1991) Reinterpretation of reduction potential measurements done by linear sweep voltammetry in silicate melts, *Geochim. Cosmochim. Acta* 55, 2831-2838.
- Haskin, L. A. and Colson, R. O. (1991) Physical-chemical properties of silicate melts and "magma" electrolysis, in *MISM report, Magmaelectrolysis of indigenous space materials, a state-of-the-art workshop*, Univ. of Arizona/NASA space engineering research center, Tucson, 4-23.
- Colson, R. O. (1992) Mineralization on the Moon? : Theoretical considerations of Apollo 16 "rusty rocks", sulfide replacement in 67016, and surface-correlated volatiles on lunar volcanic glass, in *Proc. Lunar and Planet. Sci. Conf. V. 22*, 427-436.
- Haskin, L. A. and Colson, R. O. (1992) Steady state composition with low Fe²⁺ concentrations for efficient O₂ production by "magma" electrolysis of lunar soils, in *Engineering, Construction, and Operations in Space III, V 1* (eds W. Z. Sadeh, S. Sture, and R. J. Miller), ASCE NY. 651-665.
- Colson, R. O. (1992) Solubility of neutral nickel in silicate melts and implications for the Earth's siderophile-element budget, *Nature* 357, 65-68.
- Haskin, L.A., Colson, R.O., Lindstrom, D.J., Lewis, R.H., and Semkow, K.W. (1992) Electrolytic smelting of lunar rock for oxygen, iron, and silicon, In *Lunar Bases and Space Activities of the 21st Century (II) NASA Conference Publication 3166. V. 2* (Ed. W. W. Mendell) 411-422.
- Steele, A. M., Colson R. O., Korotev R. L., and Haskin L. A. (1992) Apollo 15 green glass: Compositional distribution and petrogenesis, *Geochim. Cosmochim. Acta* 56, 4075-4080.
- Colson, R. O. and Haskin, L. A. (1992) Oxygen from the lunar soil by molten silicate electrolysis, *NASA spec. publ.* 509, V. 3 (Ed. M. F. McKay, D. McKay, M. Duke), pp 195-209.
- Haskin, L. A., Colson, R. O., Vaniman, D. T., and Gillett, S. L. (1992) A geochemical assessment of possible lunar ore formation, in *Resources of Near-Earth Space* (Eds. J. S. Lewis, M. S. Matthews, M. L. Guerrieri) Univ. of Arizona press, Tucson, pp 17-50.
- Colson, R. O. and Haskin, L. A. (1992) Producing oxygen by silicate melt electrolysis, in *Resources of Near-Earth Space* (Eds. J. S. Lewis, M. S. Matthews, M. L. Guerrieri) Univ. of Arizona press, Tucson, pp 109-127.
- Jolliff B. L., Haskin L. A., Colson R. O., and Wadwa M. (1993) Partitioning in REE-saturating minerals: Theory, experiment, and modelling of whitlockite, apatite, and evolution of lunar residual magmas, *Geochim. Cosmochim. Acta* 57, 4069-4094.

- Colson R. O., Keedy C. R. and Haskin L. A. (1995) Diffusion and activity of NiO in CaO-MgO-Al₂O₃-SiO₂ melts considering effects of a_{O²⁻} and γ_{Ni²⁺}, *Geochimica Cosmochimica Acta* 59, 909-925.
- Colson R. O. (1998) Unexpected results of some simple exercises in equilibrium melting based on experimentally determined partition coefficients, *Planetary Petrology and Geochemistry: International Geol. Rev.*, 40, 936-943, and in *The Lawrence A. Taylor 60th Birthday Volume*, Bellweather Publishing, Columbia Maryland, .
- Colson R. O., Colson M C., Nermoe, M. K. B., Floden, A. M. and Hendrickson, T. R. (2000) Affects of Al on Cr dimerization in silicate melts: Implications for Cr partitioning , *Geochim Cosmochim Acta* V 64, 527-543.
- Colson M. C. and Colson R. O. (2000) Spirit of the Volcano, *Journal of Geoscience Education*, November issue
- Colson M. C., Colson R. O., and Nellerhoe R. (2004) Stratigraphy and Depositional Environments of the Upper Fox Hills and Lower Hell Creek Formations at the Concordia Hadrosaur Site in Northwest South Dakota, *Rocky Mountain Geology* v. 39, no. 2, 93-111.
- Colson R. O., Floden A. M., Haugen T. R., Malum K. M., Sawarynski M., Nermoe M. K. B., Jacobs K. E., and Holder D. (2005) Activities of NiO, FeO, and O²⁻ in silicate melts, *Geochim Cosmochim Acta* V 69, 3061-3073.
- Colson R. O. (2010) In situ voltammetric observation of transitions above the liquidus in silicate Melts, in *Contributions to Mineralogy and Petrology: Volume 159, Issue 5 (2010)*, p 703-717. Online at <http://www.springerlink.com/openurl.asp?genre=article&id=doi:10.1007/s00410-009-0449-7>. since Oct 2009
- Colson M. C., and Colson R. O. (2016) Planning NGSS-Based Instruction: Where do you start? *The Science Teacher* v83 n2 p51-53, *Science Scope* v39 n6 p16-18, and *Science and Children* v53 n6 p23-25.
- Colson R. O. (2017) An Approach to Modeling Trace Component Activities in Silicate Melts: NiO. *Contrib Mineral Petrol* (2017) 172: 47. doi:10.1007/s00410-017-1361-1
- Colson R. O and Colson M C (2017) The Importance of Teacher as Practitioner of Science in the Earth Science Classroom: An Example Considering the Water Cycle and Salt Water Incursion in South Florida, *Florida Science Teacher*, August 2017 issue, pg 12-16, Florida Association of Science Teachers.
- Colson R. O. and Colson M. C. (2018) Classroom-Scale Experiments in System-Scale Modeling with Application to the Global Cycle of Water and Energy, *ScienceScope* v 42, p32-44.
- Colson R and Colson M (2018) Investigative Classroom Science: A Cure for National Skepticism of Science? In *In the Trenches*, v8 no 4 p 6-8m NAGT
https://nagt.org/nagt/publications/trenches/v8-n4/investigative_classroom_scienc.html
- Colson R and Colson M (2018) Testing models through personal observation: Phases of the Moon, published in *In the Trenches* v 8, n 4, online resources.
https://nagt.org/nagt/publications/trenches/v8-n4/testing_models_through_persona.html
- Colson R. O. and Leonard K. () Essay and multiple choice assessment of earth science content knowledge among earth science teachers in Minnesota and North Dakota: An evaluation of factors important in teacher preparation. In revision for submission to *J. Geoscience Education*.

Other publications, presentations, and teacher workshops

- Colson, R.O., McKay, G.A., and Taylor, L.A. (1983) REE crystal/liquid distribution coefficients in basalt systems: reevaluation of experimental determinations. (abstr) *EOS. Trans. Am. Geophys. Union* 64, 343.
- Colson, R.O., McKay, G.A., and Taylor, L.A. (1983) Compositionally dependent complexities in experimentally determined REE partitioning coefficients. (abstr) *Geol. Soc. Am. annual meeting, Abstracts with programs* 15, 547.
- Colson, R.O., Taylor, L.A., and McKay, G.A. (1984) REE between olivine and melt: A proposed substitution mechanism, In *Lunar and Planetary Sci. XV*, 178-179.
- Colson, R.O., McKay, G.A., and Taylor, L.A. (1985) A model for trace element partitioning: orthopyroxene and melt, in *Lunar and Planetary Sci. XVI*, 146-147.
- Colson, R.O., Taylor, L.A., and McKay, G.A. (1986) Predictive Thermodynamic Modeling for Trace Element partitioning in Magmatic Systems, in *Lunar and Planetary Sci. XVII*, 144-145.
- Colson, R.O., Nyquist, L., McKay, G., and Horz, F. (1987) Possible Isotopic resetting mechanisms in Shergottite Meteorites, in *Lunar and Planetary Sci. XVIII*, 191-192.
- McKay, G., Wagstaff, J., Le, L., Lindstrom, D., and Colson, R. (1987) Whitlockite/melt partitioning and Henry's law: Shergotty late-stage minerals, in *Lunar and Planetary Sci. XVIII*, 625-626.
- Colson, R.O. and McKay, G.A. (1988) Non-Gaussian diffusion profiles for Sr and Ba in plagioclase (abstr), *EOS. Trans. Am. Geophys. Union* 69, 522.
- Colson, R. O. and Haskin, L. A. (1989) Some effects of composition on efficiencies for production of O₂ and Fe₀ from silicate melts by electrolysis, in *Lunar and Planetary Sci. XX*, 175-176.
- Colson, R. O. and Haskin, L. A. (1989) Use of stationary electrode polarography to measure reduction potentials for Eu³⁺ in melt of diopsidic composition, in *Lunar and Planetary Sci. XX*, 177-178.

- Haskin, L. A. and Colson, R. O. (1989) Lunar resources for use in near-earth space, (abstr) UA/NASA space engineering research center for utilization of local planetary resources annual invitational symposium.
- Colson, R.O. (1989) A reaction relationship between two nepheline syenites from Magnet Cove, Arkansas, possibly related to immiscible separation of carbonatitic magma. (abstr) Geol. Soc. Am. annual meeting, Abstracts with programs 21, A326.
- Triffet, T. (Ed.) Automation of extraterrestrial systems for oxygen production (AESOP) report, (1989) UA/NASA Space (Principal Authors: L. Schooley, F. Cellier, J. Sutor, M. Gibson, R. Ness, R. Colson, A. Cutler, and R. Waldron), Engineering Research Center, Tucson.
- Colson, R. O. and Haskin, L. A. (1990) Lunar oxygen and metal for use in near-earth space: magma electrolysis, (abstr) ASCE/AIAA Space 90 Engineering, Construction, and Operations in Space.
- Colson, R.O. and Keedy, C.R. (1990) Redox relationships in silicate melts and silicate melt structure, in Lunar and Planetary Sci. XXI, 216-217.
- Colson, R.O. (1990) Characterization of metal products of silicate melt electrolysis, in Lunar and Planetary Sci. XXI, 214-215.
- Keedy, C.R., Colson, R.O., and Haskin, L.A. (1990) A study of redox behavior of Ni in silicate melts of diopsidic to anorthitic composition, in Lunar and Planetary Sci. XXI, 617-618.
- Colson, R. O. (1990) Solubility of NiO in silicate melts and implications for metal/melt and crystal/melt partitioning (abstr) Geol. Soc. Am. annual meeting Abstracts with programs 22, A164.
- Colson, R. O. and Haskin, L. A. (1991) Magma Electrolysis: An update, (abstr) Second Annual Symposium of the UA/NASA Space Engineering Research Center, 7 (invited).
- Haskin, L. A. and Colson, R. O. (1991) A geochemical assessment of possible lunar ore formation, (abstr) Second Annual Symposium of the UA/NASA Space Engineering Research Center, 9 (invited).
- Colson, R. O. and Steele, A. M. (1991) Major element trends in Apollo 15 green glass B, in Lunar and Planetary Sci. XXII, 231-232.
- Steele, A. M., Colson, R. O., and Haskin, L. A. (1991) Co and Ni as incompatible elements in the lunar mantle: Implications for fO_2 and the petrogenesis of Apollo 15 green glass, Lunar and Planetary Sci. XXII, 1317-1318.
- Haskin, L. A. and Colson, R. O. (1991) MISM progress at Washington University, at A state of the art magma electrolysis of indigenous space materials workshop, UA/NASA SERC, Tucson (invited).
- Colson, R. O., and Haskin, L. A. (1991) Extracting oxygen from lunar materials by silicate melt electrolysis, Extended Abstracts, AIChE 1991 summer national meeting, 130, (invited).
- Colson, R. O. and Steele, A. M. (1991) Nickel and cobalt as incompatible elements in olivine and orthopyroxene (abstr) EOS Trans. Am. Geophys. Union 72, 547.
- Colson, R. O., Jolliff, B. L., and Haskin, L. A. (1992) Inferring REE substitution reactions in lunar whitlockite, Lunar and Planetary Sci. XXIII, 235-236.
- Haskin, L. A., Jolliff, B. L., and Colson, R. O. (1992) Effects of REE³⁺ saturation on the substitution in whitlockite of 2 REE³⁺ + vacancy in Ca(IIA) for 3 Ca²⁺, Lunar and Planetary Sci. XXIII 501-502.
- Haskin, L. A., Jolliff, B. L., and Colson, R. O. (1992) On partitioning of REE between whitlockite and apatite in high-ITE lunar rocks; petrologic consequences, Lunar and Planetary Sci. XXIII 503-504.
- Colson R. O. and Keedy C. R. (1992) Contributions of activities of O²⁻ and Ni²⁺ to NiO activity and implications for silicate melt structure, (abstr) EOS Trans. Am. Geophys. Union 73, 603.
- Haskin L. A. and Colson R. O. (1992) Resource availability at Taurus-Littrow, in Geology of the Apollo 17 Landing Site, LPI Tech. Rep. 92-09, Part I, 9-14, Lunar and Planetary Inst., Houston.
- Colson R. O. and Jolliff B. L. (1993) Crystal-chemistry and partitioning of REE in Whitlockite, Lunar and Planetary Sci. XXIV 323-324.
- Colson R. O. (1993) Graphite "solubility" and CO vesiculation in basalt-like melts at one-atm, Lunar and Planetary Sci. XXIV 321-322..
- Colson R. O. and Jolliff B. L. (1993) Effect of Fe Concentration on REE Partitioning in Whitlockite, (abstr) EOS Trans. Am. Geophys. Union.
- Colson R. O. (1994) Who Killed Cora Crinoid? National Science Teacher Association Area Convention in Minneapolis
- Colson R. O. and Colson M. C. (1995) Chromium, a dimer in silicate melts?: Implications for redox equilibria and partitioning, in Lunar and Planetary Sci. XXVI, 269-270.

- Colson R. O. (1995) Lunar Pioneers and Prospectors, Dinner speech at North Central Meeting of the Astronomical League
- Colson R. O. (1995) Science Reasoning Test, used in course evaluations
- Colson R. O. (1995) Critical thinking in Earth Science Today, presentation for Bush Miniconference at MSU
- Colson R. O. (1996) Petrology on the Moon, lecture at North Dakota State University
- Kirvan, C. V. and Colson R. O. (1996) Geochemical stratigraphy in glacial Lake Agassiz sediments, North Central Section Geol. Soc. Am. abstracts with programs, V 28, no 6, p 49.
- Colson R. O. and Colson M. C. (1996) Earth Science Basics Test, used in course evaluations
- Colson R. O. and Colson M. C. (1997) Chromium, a dimer in silicate melts? New electrochemical evidence addressing dimerization and the conditions under which it is important. Lunar and Planetary Science XXVIII, 249-250
- Colson R O and Colson M C (1997) Doing Earth Science investigation before learning basic knowledge in an introductory college Earth Science course, Second International Conference on Geoscience Education, Learning about the Earth as a System, Hilo HI, .Conference Proceedings pg 112.
- Colson M C and Colson R O (1997) Doing Earth Science investigation before learning basic knowledge in an 8th grade Earth Science class, Second International Conference on Geoscience Education, Learning about the Earth as a System, Hilo HI, .Conference Proceedings pg 84.
- Colson, R O, Nermoe M, Floden, A, and Hendrickson, T (1997) Use of electrochemical methods to measure the effects of F and Cl on silicate melt polymerization, Geol. Soc. Am. abstracts,
- Colson R O (1997) Pathfinder Pebble Puzzles, What's up with Barnacle Bill on Mars, presentation at the 1997 North Dakota Science Teachers Association meeting, Oct 9, 1997.
- Russ Colson, (June 1997) "What's Cooking on the Moon" and associated activities (www.moorhead.msus.edu/~geograph/SciMath/Cooking.html)
- Russ Colson, (Aug 1997) "Are you awake to Earth Science" (www.moorhead.msus.edu/~geograph/SciMath/listgame.html)
- Colson R. O. (1997) Liberal Studies Self Evaluation, used in course evaluation.
- Floden, A. M., Colson R. O. Nermoe, M. K. B., and Hendrickson, T. R. (1998) Effects of CO on the activity of Nickel in a simple silicate melt. Lunar and Planetary Science XXIX.
- Colson R. O. Nermoe, M. K. B., Hendrickson, T. R., and Floden, A. M. (1998) Stabilization of Cr³⁺ dimers in silicate melt by the presence of Al. Lunar and Planetary Science XXIX.
- Hendrickson, T. R., Colson R. O. Nermoe, M. K. B., and Floden, A. M. (1998) Elemental migration along grain boundaries as a process of chemical differentiation. Lunar and Planetary Science XXIX.
- Holder, D. H., Colson, R. O., Floden, A. M., Hendrickson T. R., Malum K. M., and Nermoe M. K. B. (1999) The effects of CO on the activity of Nickel and Zinc in silicate melts, with implications for Ni partitioning and petrogenesis of Apollo 15 green glass B, Lunar and Planetary Science XXX, #1482.
- Jacobs, K. E. Colson, R. O., Hendrickson T. R., Floden A. M., Holder D., Malum K. M., and Nermoe M. K. B. (1999) The effects of Phosphorous on Ni and Fe activity in a silicate melt, Lunar and Planetary Science XXX, #1486.
- Hendrickson T. R., Colson R. O., Floden A. M, Malum K. M., Holder D. H., and Nermoe M. K. B. (1999) An improved method for measuring electrode surface areas in electrochemical experiments in silicate melts, Lunar and Planetary Science XXX, #1781.
- Colson R. O., Hendrickson T. R., Malum K. M, Floden A. M (2000) Mapping activity variations in lunar volcanic green glass analogs using differential pulse voltammetry, , Lunar and Planetary Science XXXI, #1771.
- Colson R. O., Hendrickson T. R., Malum K. M, Floden A. M (2000) Electrochemical measurement of activities for NiO, Ru₂O₃, and ZnO in a lunar volcanic glass analog, Lunar and Planetary Science XXXI, #1774.
- Colson R. O. (2000) MSUM Climate Change Forum Session I: Prehistoric changes in Earth's Climate: Clues to the future (moderator).
- Colson R. O. (2000) Innovations in Undergraduate Earth Science: Is there anything new under the Sun, 2000 Minnesota Academy of Sciences Forum, trends in geoscience education (invited).
- Colson R. O. (2001) Earth Science Today, a course in Earth and Planetary Science for elementary education majors, web.mnstate.edu/colson/est/est.

- Colson R. O. (2001) Learning to Read Stories of Prehistoric Climate Change: Clues to the future, MSUM World of Change, Teacher Workshop March 5, 2001.
- Malum, K. M., Colson R. O., and Sawarynski M. (2001) Mapping activity variations for Ru₂O₃ in lunar volcanic green glass analogs using differential pulse voltammetry, Lunar and Planetary Science XXXII, #1672.
- Colson, R. O (2001) Use of differential pulse voltammetry to make in-situ examination of variations in melt structure with temperature and composition of silicate melts (abstr) EOS Trans. Am. Geophys. Union 82, S431.
- Colson R. O. (2003) Doing Chemistry While Exploring Earth Science, MSUM World of Change, Teacher Workshop, Spring 2003, www.mnstate.edu/colson/teachers/worldsofchange2003.html.
- R. O. Colson, A. M. Floden, T. R. Haugen, K. M. Malum, M. Sawarynski, M. K. B. Nermoe, K. E. Jacobs, D. Holder (2004) Modeling the activity of NiO by treating the nickel cation and oxide anion as separate components in silicate melt, European Geophysical Meeting, P0107, Nice France.
- R. O. Colson (2004) Sub-phase clusters above the liquidus in silicate melts, European Geophysical Meeting, VGP2, Nice France.
- R. O. Colson and K. M. Malum (2005) Dependence of Ru₂O₃ activity on composition of silicate melts: using statistical correlations to infer thermodynamic behavior in the melt. Lunar and Planetary Science XXXVI, #1190.
- D. Schwert and R. Colson (2005) Field Trip: Geology and land use in the southern Lake Agassiz Basin, for the Hands Across the Red, combined MnSTA and NDSTA annual science teacher conference, p20.
- R. Colson, M Schoeneck, and T. Somes (2005) Teaching topics in earth science: a mini-course, for the Hands Across the Red, combined MnSTA and NDSTA annual science teacher conference, p14.
- T. Nesheim, R. O. Colson, A. Cota, A. Larson, J. Rock, and C. Johnson, (2007) Neutral Nickel in Silicate Melts: Characterization of experimental results. Lunar and Planetary Science XXXIIX, 1719.
- Cota A, Colson R. O. and Larson A. (2007) An electron microprobe examination of ceramic fragments from the Sprunk Site, 65th Annual Plains Anthropological Conference.
- R. O. Colson, E Hay, A. Larson, and A. Cota (2008) Effect of Carbon Monoxide on Liquidus Temperatures of Silicate Melts at 1-atm Pressure, Lunar and Planetary Science XXXIX, 1310.
- T. Prissel and R. O. Colson (2009) Additional experiments suggesting that neutral nickel is soluble in silicate melts at low concentration, Lunar and Planetary Science XL, 1172.
- A. L. Larson, R. O. Colson, and E. Hay (2009) Reinterpretation of observed effects of CO on crystallization in silicate melts at 1-atmosphere pressure, Lunar and Planetary Science XL, 1343.
- R. O. Colson (2011) Incompatibility of Ni in Olivine at Low fO₂ and Consideration of Solubility of Neutral Nickel, LPSC XLI, 2491
- R. O. Colson (2012) Reading Stories from the Earth and Sky, Invited presentation at the Minnesota Earth Science Teachers Association annual meeting, Feb, 10, 2012, St. Cloud MN.
- R. O. Colson, J. K. Anderson, S. J. Buhr, M. Ramsey, L. K. Anderson, E. D. Young, S. Fettig, and T. E. Erickson (2013), Measuring solubility of neutral nickel in silicate melts: Another experimental problem LPSC XLIV, 1559
- J. K. Anderson, S. J. Buhr, R. O. Colson, L. K. Anderson, E. D. Young, and S. Fettig (2013) Importance of considering melt activity coefficients and charge-balancing substitution mechanisms when understanding partitioning in olivine, LPSC XLIV, 1555.
- L. Anderson, E. Young, and R. O. Colson (2015) Modeling NiO Activities in Silicate Melts Considering Separate Contributions from Ni²⁺ and O²⁻: Dependence of O²⁻ on melt polymerization, LPSC XLVI, 1358.
- M. Colson and R. O. Colson (2015) No Answer Key! Becoming a Mentor-Scholar with the NGSS Science Practices, NSTA Area Conference in Kansas City, Dec 3.
- R. O. Colson and K Leonard (2016) Correlations between Teacher Preparation and Conceptual Understanding in the Earth Sciences, at Earth Educators' Rendezvous 2016 in Madison Wisconsin, July 18 2016.
- M. Colson and R. O Colson (2016) Igneous Cooling Rates, Crystal Size, and NOT Getting the 'Right' Experimental Results at Earth Educators' Rendezvous 2016 in Madison Wisconsin, July 21 2016.
- R. O. Colson (2017) The challenge of getting students to do modeling rather than simply memorizing or explaining broad theories--examples from the earth sciences, at Scientific Modeling in the 6-12 Classroom, a workshop for science teachers, at Minnesota State University Moorhead Feb 4, 2017.

- R. A. Elvrum, E. R. Schaeferbauer, and R. O. Colson (2017) Effect of Ferric Iron on the Activity Coefficient of Nickel Oxide in Silicate Melts, LPSC 48, 1526
- R. O. Colson, E. Young, and L. Anderson (2017) Nickel Distribution between Immiscible Melts as a Means to Understand the Influence of Ferric Iron on NiO Activity Coefficients LPSC 48, 1548.
- Colson R O and Colson M C (2017) Addressing Public Science Skepticism through Classroom Research Experiences, in Teacher Feature, MnSTA Newsletter Spring 2017, p 6-8.
- Colson R O and Colson M C (2017) NSTA Press® Session: Learning to Read the Earth and Sky, Explorations Supporting the NGSS, at the NSTA Los Angeles National Conference, March 31, 2017.
- Colson R O and Colson M C (2017) NSTA Press® Session: Water and People: An Example Hydrology Unit for Grades 8–12, at the NSTA STEM Forum and Expo, Orlando, FL, July 2-14, 2017.
- Colson R O and Colson M C (2017) NSTA Press® Session: Creating a Classroom Narrative: Fitting science reasoning problems and open-ended investigation into a curriculum, at the NSTA Area Conference, Milwaukee, WI, Nov 10, 2017.
- Colson R O (2017) Earth Science Essentials: An Interactive Text and Self-Guided Course (for middle and high school science teachers), <http://web.mnstate.edu/colson/ESE/ESE.html>
- Colson R O and Colson M C (2018) NSTA Press Session: Telling Earth Stories—Student-Led Modeling with Real Data and Authentic Experiments, at the NSTA Atlanta National Conference, March 17, 2018.
- Holte E P, Dougherty E B and Colson R O (2018) Experimental Measurements of CoO Activities in Silicate Melts, LPSC 49, 1479.
- Colson M. C. and Colson R. O (2019) Becoming a Practitioner of Science: Engaging Students in Solving Real Earth Science Problems in Earth, Physical, or Environmental Science Classrooms, NSTA Professional Learning Institute day long workshop, April 10, 2019.
- Colson R. O and Colson M. C (2019) NSTA Press® Session Buoyancy, Glaciers, and Mountains—Physical Science Concepts in the Earth Science Classroom, hands-on workshop at the St Louis National Science Teachers Association (NSTA) National Conference, April 12, 2019.
- Colson R. O and Colson M C., (2019) Investigating Movement of Water and Energy in the Atmosphere, Share-a-thon at the National Earth Science Teachers Association (NESTA) national meeting, St Louis, April 12, 2019.
- Colson, Russ (panelist), Grier JA (moderator), Woodney L., and Smith V Ann (2019) Our Changing Views of Humanity in Space, Dublin 2019 World Science Fiction Convention.
- Colson, Russ (moderator), Bell Burnell, Jocelyn, and Consolmagno, Br Guy (2019) Epistemologies and Disciplines: Two Astronomers Meet, Dublin 2019 World Science Fiction Convention.
- Colson, Russ (panelist), Libia, Brenda (moderator), Sparks, Cat, and Rokne, Olav (2019) Changing Climates, Changing Worlds, Dublin 2019 World Science Fiction Convention.
- Colson, R. O., Aakash BC, Colson, F. E., Sharma, T., and Kosugi Y. (2020) Preliminary experiments to constrain the effect of Cl on the activity of NiO in silicate melts using diffusion profiles of Ni in Pt wire loops, LPSC 51, 1502—(published 2-page abstract only—conference was cancelled).
- Colson, Russ (2020) Effect of writing science fiction on understanding of geological concepts—preliminary results of a study in progress, Jan 7, 2020, The Teachers Corner, Issues in Earth Science, <http://earthscienceissues.net/earthteachblog/2020/01/07/effect-of-writing-science-fiction-on-understanding-of-geological-concepts-preliminary-results-of-a-study-in-progress/>
- BC, Aakash, Sharma T, Grosz, B, Kosugi, Y, Colson, R. and Colson F. (2020) Use of Pt-Melt Equilibration and Electrochemical Experiments to Constrain the Effect of Cl on NiO Activity in Silicate Melts, North Central GSA, Duluth, MN (abstract only, poster was cancelled)
- Colson, M. C. and Colson R. O. (2020) Learning About versus Figuring Out: Transforming traditional lessons into 3-dimensional lessons, Minnesota Minerals Education Workshop (MMEW), Winona State University, June 23, 2020. (cancelled)
- Colson R. O. and Colson, M. C (2021) Experimental Investigation: The Effect of Temperature on Deformation Character of Rock, presented as part of the workshop ESTEP: Professional Development for Teachers of the new 6th grade Earth Science Standards, at Bemidji MN July 27-28, Eden Prairie MN, Aug. 3-4, and Champlin MN, Aug 10-11. 5 hour workshop
- Colson, M. C. and Colson R. O. (2021) Modeling Motions in Space: Phases of the Moon, presented as part of the workshop ESTEP: Professional Development for Teachers of the new 6th grade Earth

- Science Standards, at Bemidji MN July 27-28, Eden Prairie MN, Aug. 3-4, and Champlin MN, Aug 10-11. 7 hour workshop.
- Colson R. O. and Colson, M. C (2022) Experimental Investigation: The Effect of Temperature on Deformation Character of Rock, presented as part of the workshop ESTEP: Professional Development for Teachers of the new 6th grade Earth Science Standards, at Metro State Univ Minneapolis MN July 19-20, and at Alexandria MN July 19-20. 5 hour workshop
- Colson, M. C. and Colson R. O. (2021) Modeling Motions in Space: Phases of the Moon, presented as part of the workshop ESTEP: Professional Development for Teachers of the new 6th grade Earth Science Standards, at Metro State Univ Minneapolis MN July 19-20, and at Alexandria MN July 19-20. 7 hour workshop.
- Colson R. O. Colson, M. C, Schoeneck M and Kalina H. (2022) Investigations in Water and Rock An ESTEP Geology Workshop for High School Educators, at Minnesota State University Moorhead, Moorhead MN July 25-29, 5 day workshop
- Bloodgood D, Grosz B, Bordwell B, Colson R (2023) XRF Analysis of Pb Concentrations in Soils in and near Moorhead, MN, presented at the National CUR conference in University of Wisconsin-Eau Claire, Eau Claire, WI, April 14, 2023.
- Colson R. O. Colson, M. C., Schoeneck M and Kalina H. (2023) Investigations in Water and Rock An ESTEP Geology Workshop for High School Educators, at Minnesota State University Moorhead, Moorhead MN July 24-28, 5 day workshop
- Colson R. O. Colson, M. C. (2024) Stability and change in Earth systems: a 3-D experience: A workshop for Anoka-Hennepin teachers of Earth Science, February 20, 2024
- Colson R. O. Colson, M. C. (2024) Stability and Change in Earth Systems: An ESTEP Workshop for High School Educators, A workshop at Coon Rapids HS, MN, July 22-26, 2024
- Colson R. O. (2024) Earth Science Essentials (ESE1) Geos 499/599 (an online course taught after retiring from MSUM for the ESTEP program for state of Minnesota secondary science teachers.)
- Colson R. O. (2024) Problems in Water, Land, and People: Geos 211L (an online course taught after retiring from MSUM for the MSUM geology and geography majors)

